WE CLAIM:

1. A fan motor comprising:

a base unit including a base plate that is formed with a central plate hole, and a shaft tube that extends integrally from said base plate at a periphery of said central plate hole and that is formed with a shaft hole defining a hole axis;

a stator unit including

a stator core member having a metal core body that includes a central hub portion and a plurality of core-winding spokes that extend radially, outwardly and integrally from said central hub portion and that are angularly spaced apart from each other, said central hub portion being sleeved on said shaft tube and defining a sleeve axis coaxial with said hole axis, said metal core body having opposite core surfaces along said sleeve axis, each of said core-winding spokes extending in a respective radial direction relative to said sleeve axis and having a peripheral surface that surrounds the respective radial direction, said stator core member further including an insulator layer coated on said opposite core surfaces of said metal core body and on said peripheral surfaces of said core-winding spokes, each of said core-winding spokes further having a distal end face remote from said sleeve axis,

a plurality of stator coils wound around said insulator layer at said core-winding spokes, and

a circuit board disposed adjacent to one of said opposite core surfaces of said metal core body and coupled electrically to said stator coils; and

a rotor unit including

a drive shaft having a base connecting portion extending into said shaft hole and mounted rotatably in said shaft tube of said base unit, and a blade connecting portion extending from said base connecting portion and disposed outwardly of said shaft tube,

a sensing ring having an inner ring surface that confines a ring hole coaxial with said hole and sleeve axes, said ring hole having a size sufficient to receive said stator unit therein such that said inner ring surface of said sensing ring forms an annular clearance with said end faces of said core-winding spokes, and

a cover member having a cover plate portion and a peripheral wall portion extending from a periphery of said cover plate portion, said peripheral wall portion being secured to said sensing ring, said blade connecting portion of said drive shaft extending fixedly through said cover plate portion.

2. The fan motor as claimed in Claim 1, wherein said base unit further includes a bearing unit for mounting rotatably said base connecting portion of said drive shaft in said shaft tube.

3. The fan motor as claimed in Claim 1, wherein said metal core body includes twelve of said core-winding

spokes, and said stator unit includes four sets of said stator coils.

4. The fan motor as claimed in Claim 1, wherein at least one of said metal core body and said sensing ring is made of silicon steel.

5. A stator unit of a fan motor, comprising:

a stator core member having a metal core body that includes a central hub portion and a plurality of core-winding spokes that extend radially, outwardly and integrally from said central hub portion and that are angularly spaced apart from each other, said central hub portion defining a sleeve axis, said metal core body having opposite core surfaces along said sleeve axis, each of said core-winding spokes extending in a respective radial direction relative to said sleeve axis and having a peripheral surface that surrounds the respective radial direction, said stator core member further including an insulator layer coated on said opposite core surfaces of said metal core body and on said peripheral surfaces of said core-winding spokes;

a plurality of stator coils wound around said insulator layer at said core-winding spokes; and

a circuit board disposed adjacent to one of said opposite core surfaces of said metal core body and coupled electrically to said stator coils.